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The initiation was followed by a dinner for which the following program was arranged:

**Toastmaster:** MARSTON T. BOGERT, professor of organic chemistry.

**Engineering research:** GEORGE B. PEGRAM, dean of the schools of mines, engineering and chemistry.

**Research in forest products:** SAMUEL J. RECORD, professor of forest products, Yale University.

**Science in the industries:** M. C. WHITAKER, vice-president of the U. S. Industrial Alcohol Company.

**Applied psychology:** E. L. THORNDIKE, professor of educational psychology.

**The new members:** STEPHEN P. BURKE.

AT the meeting of the Executive Committee of the Massachusetts Society for Mental Hygiene held March 9, 1920, the following resolution was adopted:

The directors of the Massachusetts Society for Mental Hygiene desire to express their deep sorrow and their great sense of loss in the death of Professor Elmer Ernest Southard. To many of them he was a warm personal friend whom they will sorely miss. His great natural abilities, his extraordinary powers of insight and deduction were most valuable to the society in which he took an active and stimulating interest.

The directors feel that they have lost not only a most valuable adviser and colleague but one on whose sympathy and friendship they could always depend.

DR. GEORGE EGBERT FISHER, professor of mathematics in the University of Pennsylvania, died on March 28, aged fifty-seven years. The following resolutions have been passed by faculties of the university:

The faculties of the college, the graduate school and the school education have learned with profound sorrow of the death of George Egbert Fisher, professor of mathematics and sometime dean of the college.

Professor Fisher's connection with the faculty dates from 1889, when he was appointed assistant professor of mathematics.

Earnest in purpose, lofty in ideals, a patient and inspiring teacher, he invariably won and held the respect and love of his students.

We of the faculty wish to bear testimony to our appreciation of the profound scholarship of our departed colleague, and to our recognition of his exceptionally deep and abiding love for mathe-

matics. It was always his aim to foster a more general interest in this subject. We would testify also to his ready and sympathetic cooperation in all that was for the best interests of the university.

SIR ANDERSON STUART, professor of physiology in the University of Sydney since 1883 and the dean of its medical faculty, died on February 29, aged sixty-four years.

THE magnetic survey vessel, *Carnegie*, arrived at St. Helena Island, on March 30. She will sail again early in April, bound for Cape-town.

THE American Medical Association, as has been already noted, will hold its seventy-first annual session in New Orleans, beginning on April 26. This is the fourth time the association has convened in New Orleans. The twentieth annual session under the presidency of Dr. William Owen Baldwin in 1869 aided in bringing the members of the medical profession in the south into cordial relationship with the national association following the Civil War. In 1885, under the presidency of Dr. Henry F. Campbell, the thirty-sixth annual session was held in New Orleans. In 1903 the association met in the city in its fifty-fourth annual session under the presidency of Dr. Frank Billings. The present meeting will be opened under the presidency of Dr. Alexander Lambert, of New York, and Dr. William C. Braisted, surgeon-general of the U. S. Navy, will be inducted into the office of president.

#### UNIVERSITY AND EDUCATIONAL NEWS

THE legislature of the state of Mississippi has passed a bill appropriating the sum of \$350,000 for a new building for the University of Mississippi, to house the department of chemistry and the school of pharmacy.

DR. ARTHUR TWINING HADLEY, since 1899 president of Yale University, has presented his resignation, to take effect in June, 1921, when he will have reached the age of sixty-five years.

ALBERT W. SMITH, dean of Sibley College of Mechanical Engineering, Cornell Univer-

sity, has been selected by the trustees' committee on general administration to be acting president of the university until a permanent successor to Dr. Schurman is appointed.

THE professorship of electrical engineering at Lafayette College, made vacant by the resignation of Professor Rood, who left Lafayette to go to the University of Illinois, has been filled by the appointment of Professor Morland King, of Union College, as associate professor of electrical engineering.

DR. WALTER K. FISHER, of the department of zoology at Stanford University, has been promoted to an associate professorship.

DR. MAX MAILHOUSE has resigned as clinical professor of neurology in the Yale School of Medicine, his resignation to take effect at the close of the present college year.

#### DISCUSSION AND CORRESPONDENCE A SUGGESTION AS TO THE FLAGELLATION OF THE ORGANISMS CAUSING LEGUME NODULES

A VERY interesting note by Hansen on the flagellation of the legume nodule organisms (*Rhizobium*) appeared recently in this journal.<sup>1</sup> There has been a dispute for some time as to whether these bacteria have one or several flagella. Burrill and Hansen not long ago<sup>2</sup> claimed that they are monotrichic organisms, whereas various other investigators, including the present writers,<sup>3</sup> have observed peritrichic flagella. Hansen now says that he, too, has found peritrichic flagella on cultures obtained from clover, vetch and alfalfa, and calls attention to the fact that his earlier studies had been on organisms from cowpea and soy bean. Hence he suggests that there may be two different groups, one peritrichic and the other monotrichic. It is, indeed, gen-

<sup>1</sup> Hansen, Roy, "Note on the flagellation of the nodule organisms of the Leguminosæ," *Sci.*, N. S., 50: 568-569, 1919.

<sup>2</sup> Burrill, T. J., and Hansen, R., "Is symbiosis possible between legume bacteria and non-legume plants?" *Ill. Agr. Exp. Sta., Bul.* 202, 1917.

<sup>3</sup> Breed, R. S., Conn, H. J., and Baker, J. C., "Comments on the evolution and classification of bacteria," *Jour. Bact.*, 3, 445-459, 1918.

erally recognized that the organisms of cowpea and soy bean differ from the other varieties of *Rhizobium* in certain cultural features, primarily in respect to vigor of growth.

Hansen's suggestion is very interesting, but does not explain all the facts that have been observed. Wilson<sup>4</sup> has found peritrichic flagella on cultures of the soy bean organism. To be sure, as insisted by Hansen, Wilson has not published any photomicrographs; but the statement he makes is definite and no one need question it. We have seen one of Wilson's microscopic preparations (soy bean organism) and also one of Hansen's (cowpea organism); and find four or five flagella on some of the bacteria in Wilson's preparations, but only one each on those in Hansen's.

Upon enquiry we find that Wilson's cultures were sometimes as old as 28 days at the time of staining; while it appears from Burrill and Hansen's paper that their preparations were only a few days old. In this connection it is an interesting fact that a certain organism (belonging to a different group) studied in this laboratory was found to have a single polar flagellum when a few hours old, but two or three polar flagella when a day or more old. This naturally raises the question whether the cowpea and soy bean organisms may not be monotrichic in young cultures and peritrichic when they are older. This suggestion is further borne out by the fact that Hansen found (as shown by statements in his text and by his photomicrographs) the single flagellum to be attached at the corner or even at the side more often than exactly at the pole. This is just what would be expected if it were a matter of chance which one of the peritrichic flagella developed first in a young culture.

Ever since the appearance of Burrill and Hansen's paper we have wanted to investigate the truth of the matter. As we have not had the chance to do so, we take this occasion to put the idea in print that any one else inter-

<sup>4</sup> Wilson, J. K., "Physiological studies of *Bacillus radicicola* of soybean (*Soja Max.*, *Piper*) and of factors influencing nodule production," *Cornell Agr. Exp. Sta., Bul.* 386, 1917.